

## 2023 Deloitte Automotive Supplier Study

Transforming business models amidst  
rising operational challenges

**Jason Coffman, Raj Iyer, and Ryan Robinson**

# Contents

Introduction	3
Key issues in focus	6
Insights from analysis of supplier financials	9
What does it mean for suppliers?	11
Conclusion	13
Contact	14
Endnotes	15

# Introduction

The global automotive industry has held up remarkably well in spite of enormous challenges over the past three years. It has survived crisis after crisis—from semiconductor shortages and inventory challenges to supply chain disruptions and raw material price swings. Suppliers, in particular, have endured a seemingly permanent state of triage, while maintaining the business, meeting customer demand, and finding opportunities to grow. At the same time, manufacturers and dealers have uncovered some unexpected benefits from stronger price positioning and increased profitability. Underpinning all of this turmoil, the global mobility sector is transforming at a rapid rate, as governments and consumers around the world spark a shift to electric vehicles.

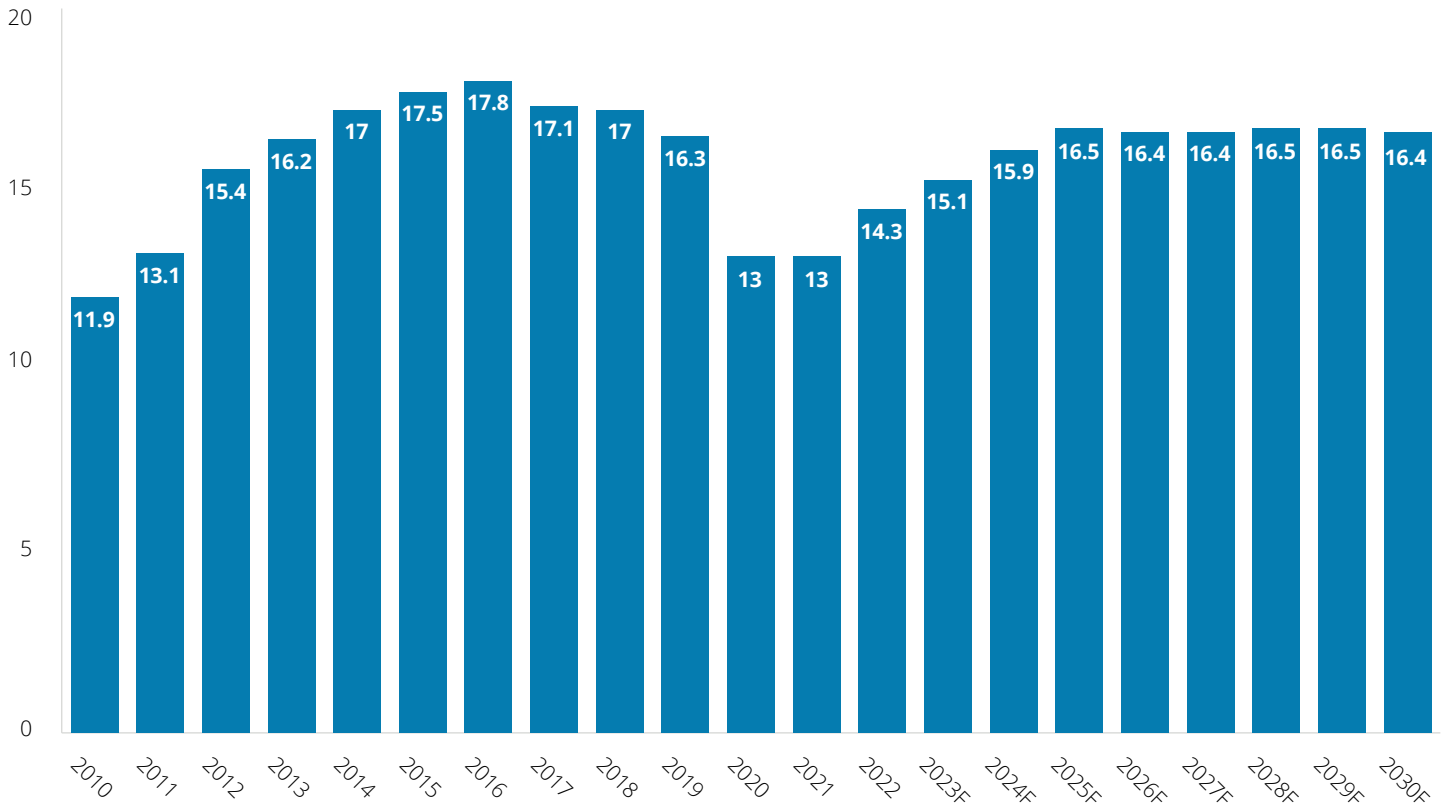
The pressure to innovate grows every day, and suppliers increasingly find themselves on the front lines as vehicle manufacturers push the responsibility to develop new technologies back through the value chain. However, some suppliers have struggled to keep up with the cost and pace of change, leaving them vulnerable with more change on the horizon.

Going forward, original equipment manufacturers (OEMs) may struggle to maintain discipline around capacity utilization and inventory management to drive continued profitability. We anticipate greater consolidation and rationalization as some suppliers will be unable to continue to invest and grow, particularly given the stress of multiple crises over the past three years, the compounding effect of an inflationary environment, and the emergence of the software-defined vehicle (SDV). Following the semiconductor crisis, OEMs increasingly sidestep their traditional Tier 1 integrators to establish relationships with suppliers further upstream to increase the visibility of potential threat vectors. Going forward, we also expect OEMs to place greater emphasis on emerging profit pools, as they pivot away from building and selling products to focus more on managing assets across multiple life cycles and chasing recurring revenue streams supporting customers and fleet operators.<sup>1</sup>

The need for this shift is reflected in the fact that North American light vehicle production is expected to flatline in the second half of this decade (figure 1). At the same time, the industry transition from internal combustion engine (ICE) vehicles to electric vehicles (EVs) is also pushing several OEMs to take more control of the supply chain through upstream partnerships and alliances to both develop the nascent supply chain and secure future supply of raw materials.<sup>2</sup>

In addition, geopolitical uncertainty has caused significant instability in the cost of energy and raw materials, and a lack of critical mineral supply (e.g., lithium, cobalt, nickel) has contributed to keeping EV prices high. In turn, these factors could exacerbate an already growing affordability concern for consumers, who worry about their forward financial capacity in this stubbornly stagnant, inflationary macroeconomic environment.

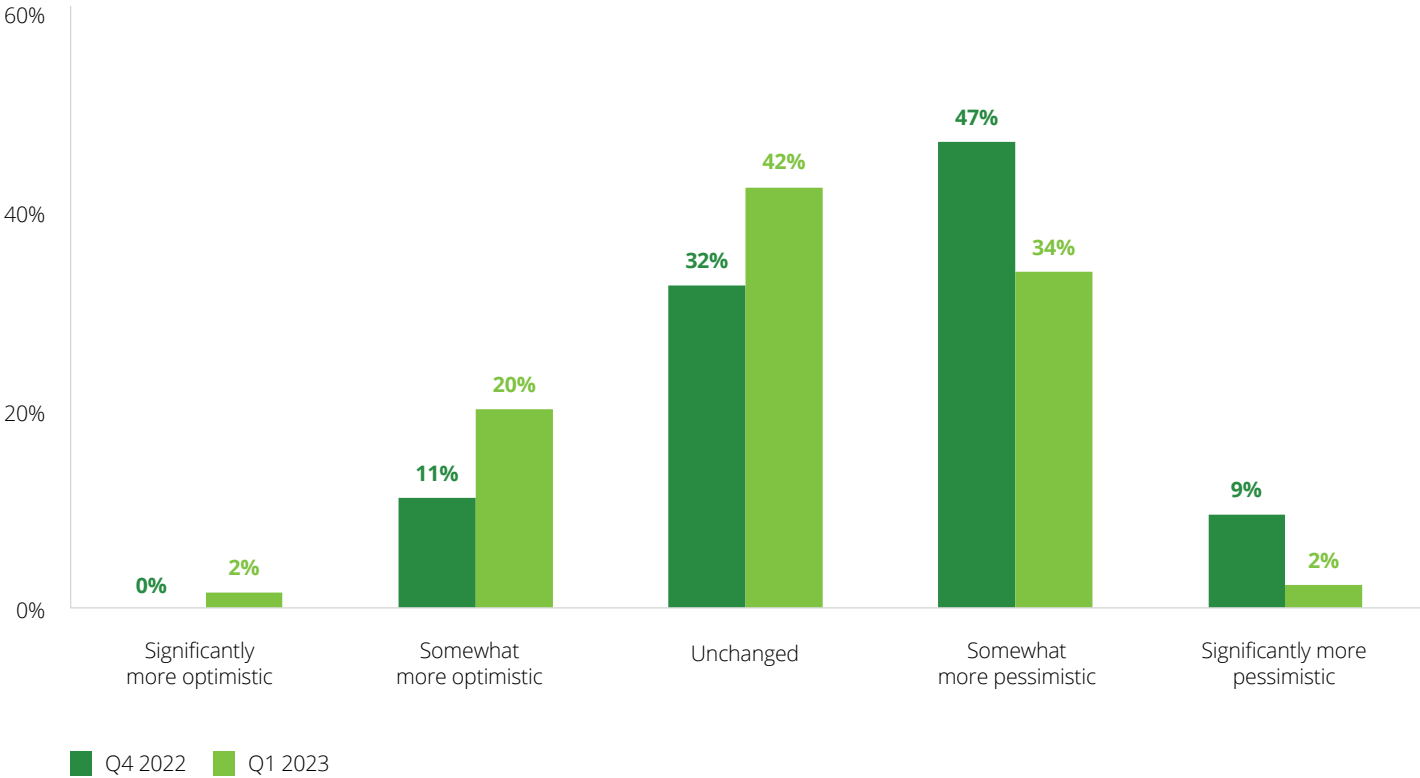
**Figure 1. North American light vehicle production—million units (2010–2030F)**



Source: S&P Global Mobility.

The sense of concern around market conditions is echoed in the latest quarterly MEMA OE Automotive Supplier Barometer, as 36% of suppliers are feeling more pessimistic about their business prospects over the coming 12-month period (figure 2). Although this compares favorably to Q4 2022 when 56% of suppliers said the same, many companies remain cautious in the face of key risks including further production slowdowns and supply chain disruptions, labor availability constraints, and a general concern for weakness in the overall economy. Asked to identify potentially severe near-term issues, larger suppliers also point to the risk posed by the financial distress being felt by sub-tier suppliers.

**Figure 2. Supplier outlook—12 months (Q4 2022 vs. Q1 2023)**



Source: MEMA OE Automotive Supplier Barometer (Q1 2023).

# Key issues in focus

## Rising cost of capital

In the wake of the Great Recession in 2008–2009, vehicle manufacturers and suppliers were successful in rightsizing production capacity. It should be noted that some OEMs had government support and many suppliers did go bankrupt, but the companies that made it through the initial shock also had the added benefit of access to sizable amounts of relatively cheap capital. Now, the pandemic has caused another huge squeeze for companies across the automotive value chain. On one hand, manufacturers and suppliers were caught in the semiconductor crisis that depleted vehicle inventories, and although the OEMs were able to turn the situation to their advantage through increased pricing and profitability, suppliers were largely left to struggle with the low-volume environment that was accentuated by production planning instability and expedited freight.

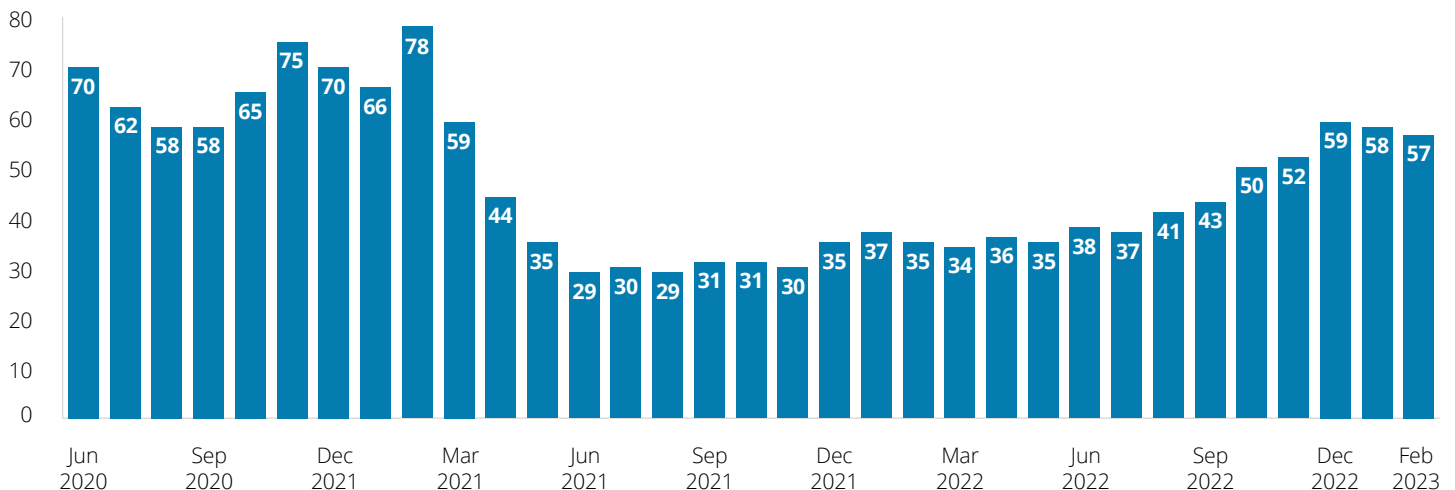
Now, many suppliers are carrying a significant amount of debt,<sup>3</sup> and cost of borrowing has risen dramatically with the rapid rise in interest rates over the past 12 months. In fact, the prolonged inflationary environment is applying significant pressure to a relatively vulnerable supply base that is struggling to find the resources necessary to invest in future products and solutions to support an electric mobility future. At the same time, the need to manage cash and working capital is important, particularly for those suppliers that may have excess inventory due to supply chain issues occurring around them. With this in mind, the risk of more supplier bankruptcies as a result of the confluence of pressures may be increasing over time.

## Bringing costs down via complexity reduction

In an effort to dramatically reduce costs, many manufacturers have realized that a lot more energy needs to be spent on driving engineering complexity out of vehicles in order to simplify the assembly process, reduce days on lot, improve margins, and reduce supply chain costs. This is exacerbated by the move to EVs, which are inherently less complex than ICE vehicles. However, many OEMs are having to juggle multiple powertrain technologies in the near term, creating a host of challenges. This should have an impact on the way suppliers compete for access to new programs.

At the same time, US light vehicle inventories are starting to rebound from the pandemic-induced inventory crisis as the industry moves through the remaining issues related to semiconductor shortages (figure 3). However, several brands may already be drifting back into an unhealthy range of supply, seemingly putting to rest any notion that the industry could avoid going back to the old paradigm of pushing as many vehicles as possible through the manufacturing and retail system by any means necessary.<sup>4</sup> On the surface, this may appear positive for suppliers that have relied on a volume-based business model for many decades.

**Figure 3. US average days' supply of light vehicles (June 2020–February 2023)**



Source: Cox Automotive.

However, the more that manufacturers have to depend on heavy incentives to sell vehicles to consumers that are increasingly concerned about their financial capacity in an inflation-charged economy, the tougher it will be for suppliers to drive component pricing and improve margins. Focusing on complexity reduction could bring vehicle prices down in a more organic way, helping to keep consumers engaged and driving quicker inventory turns. This can be particularly important as OEMs move through the process of phasing out older products and manufacturing capacity.

Many manufacturers will recognize that pushing for more discipline around cost and complexity reduction is likely a necessity moving forward, but it may add further pressure to the supply base that is tasked with driving quality at the same time it is being asked to explore the limits of cost efficiencies. The question becomes, can suppliers get ahead of this issue and lead the OEMs in complexity reduction actions without losing revenue and margin? In an ideal situation, manufacturers would reward suppliers for: (1) reducing downstream manufacturing and supply chain costs, and (2) removing costs that are not adding perceived value to the customer.

### Challenge of aligning to new OEM business models

Many automakers and suppliers are realigning their business models around increasing EV adoption. Despite lower overall vehicle sales, demand for EVs increased significantly in the United States in 2022. Total US light vehicle sales fell 8% (to 13.9 million units) in 2022—the lowest level in more than a decade.<sup>5</sup> On the other hand, US EV sales jumped approximately 65%, representing 5.8% of new cars sold in 2022 (versus 3.1% in 2021).<sup>6</sup> This upward trajectory in US EV sales is expected to continue, reaching sales of 21% or 3.4 million light vehicles by 2030.<sup>7</sup>

However, there are very different camps emerging when it comes to manufacturers that are “all in” on transitioning to an all-electric future versus those that are trying to maintain a foothold in the legacy ICE world. Some manufacturers that are positioning themselves for an all battery-powered lineup are actively reimagining the structure of their business units in an attempt to expedite the transformation. This is likely causing friction among existing suppliers trying to keep up with these fundamental changes.

In fact, some suppliers are finding it difficult to juggle the need to maintain profitability on current contracts while developing new ways of engaging customers on EV programs. On the other hand, emerging suppliers that have their finger on the pulse of EV innovation may find it easier to focus on upcoming programs but are finding it difficult to scale.

Some suppliers and OEMs alike are starting to restructure their operating models to serve emerging market needs and make associated investments in a distinct manner. Some suppliers doubling down on an EV future are also starting to redirect R&D spending away from ICE-related products while streamlining their product portfolio.

Overall, supplier efforts to restructure, acquire, divest, and even separate their businesses to best serve their customers and shareholders appear to be accelerating. Many suppliers are having to quickly pivot to brand-new technologies at the same time globalization is giving way to more reshoring as bets on economic recovery and market strengths are being made. Governments are also influencing investment behavior as companies take advantage of tax credits and cash incentives to accelerate the move toward a more sustainable future with resilient supply chains and more local jobs.



### Reshoring/nearshoring automotive supply chains

In 2021, two-thirds of plug-in EVs were assembled in the United States, and 40% of the parts were domestically sourced.<sup>8</sup> However, there are many new EVs scheduled to launch in the North American market over the next two to three years, and there is a significant capacity gap in mining and refining battery minerals, with the United States lagging far behind China.

In an effort to close this gap and encourage more domestic manufacturing capacity, the US government enacted the Inflation Reduction Act (IRA) to help speed manufacturing investments in vehicle and battery production in North America. In total, the IRA will likely establish an EV supply chain for the long term and draw \$100 billion in investment in EV battery capacity, helping to close the US-China capacity gap.<sup>9</sup>

As an example, the IRA offers specific financial incentives for battery manufacturers to establish production lines in the United States:

- Battery cells qualify for a tax credit of \$35 per kilowatt-hour of capacity, \$10 per kilowatt-hour of capacity for battery modules, and \$45 per kilowatt-hour of capacity for battery modules that do not use battery cells<sup>10</sup>
- Ten percent of the cost of electrode active materials (e.g., cathode and anode materials, anode foils, electrochemically active materials)
- Ten percent of the cost of producing critical minerals (e.g., lithium, cobalt, nickel, graphite)<sup>11</sup>
- Subsidies offered through the IRA will likely cover 30% of a battery cell manufacturer's operating cost<sup>12</sup>

By 2030, EV battery manufacturing capacity in North America will likely increase 20 times, from 55 gigawatt-hours per year in 2021 to approximately 1,000 gigawatt-hours per year. Battery suppliers and OEMs have identified many US and Canadian locations for battery-production plants. US states, including Georgia, Kansas, Kentucky, Michigan, North Carolina, Ohio, and Tennessee, could attract battery manufacturing.<sup>13</sup> These sites are likely to be located near final vehicle assembly plants to help battery makers lower transportation costs of the heavy batteries. This should also help to create many opportunities for other suppliers as global sourcing strategies are reevaluated.





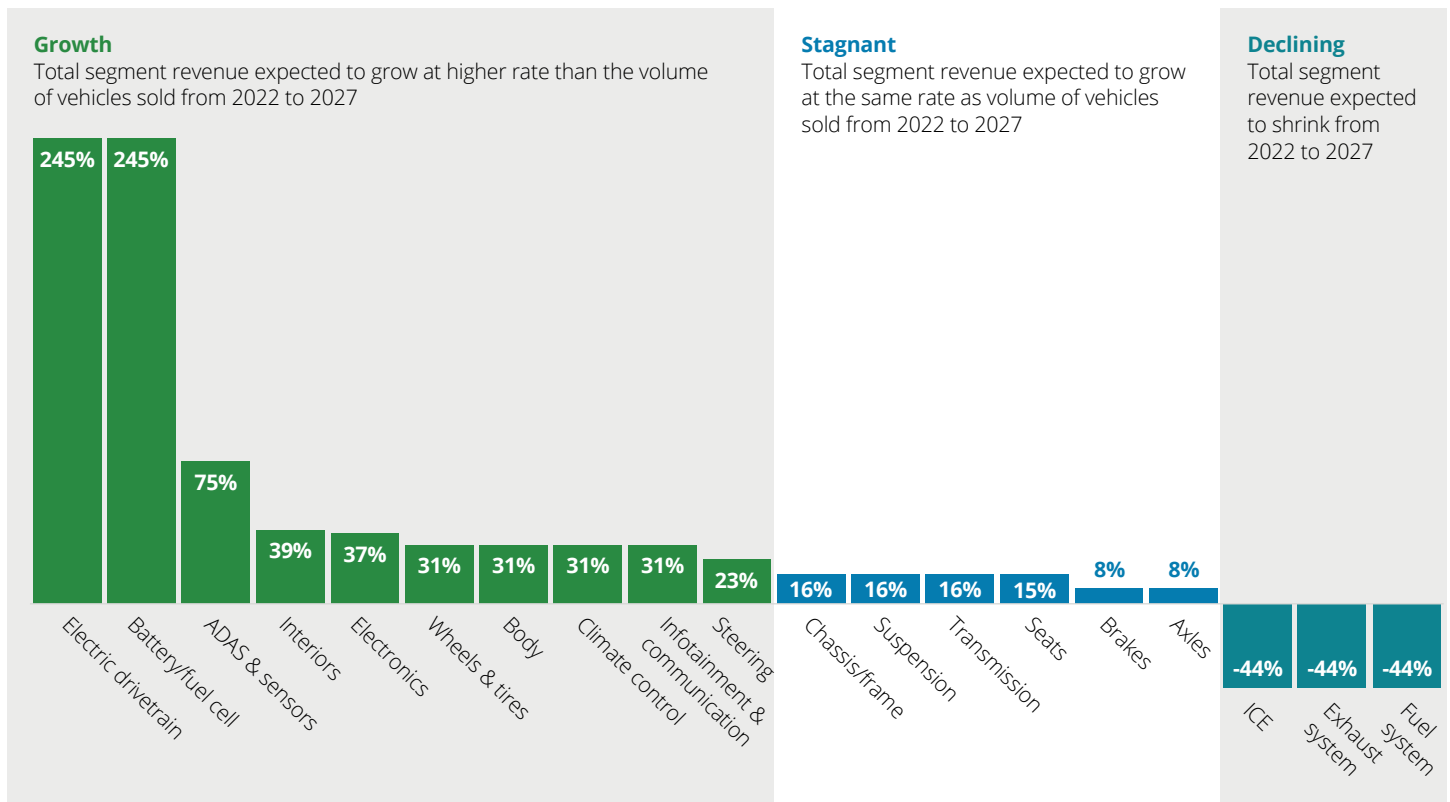
# Insights from analysis of supplier financials

For our latest report, we analyzed financial data from nearly 300 global automotive suppliers to study how the trend toward electrification will have an impact on different supplier components. In the 2022–2027 time frame, segments projected to see exponential growth include electric drivetrains (up 245%); batteries and fuel cells (up 245%); and advanced driver assistance systems (ADAS) & sensors (up 75%). On the other hand, segments such as ICE drivetrains, fuel systems, and exhaust systems are likely to see double-digit declines over that time frame (figure 4).

However, there are challenges to overcome as consumers in some markets have not fully embraced an electric vehicle future. Data from the 2023 Deloitte Global Automotive Consumer Study suggests that nearly two-thirds (62%) of US consumers still want a “traditional” internal combustion engine installed in their next vehicle. Having said that, the latest figure for consumer preference for ICE vehicles declined significantly from 80% in Deloitte’s 2018 survey.<sup>14</sup>

Despite the relatively slow adoption rate in the United States, the shift toward EVs will likely continue, as government mandates aim to create the conditions whereby half of new vehicle sales will be EVs by 2030.<sup>15</sup> Along with EVs, the market for supplier components that help advanced driver assistance systems will likely grow much faster than the volume of vehicles sold. Consumers demand these features whether they drive an ICE vehicle or an EV. Some 60% of US consumers seek out connectivity features that improve safety and provide regular updates about vehicle maintenance.<sup>16</sup> As in-vehicle digital content increases, software may become a defining characteristic in a customer’s choice of vehicle brand. Additionally, the evolution of ADAS features could help develop greater vehicle autonomy and accelerate the eventual rollout of fully self-driving vehicles.

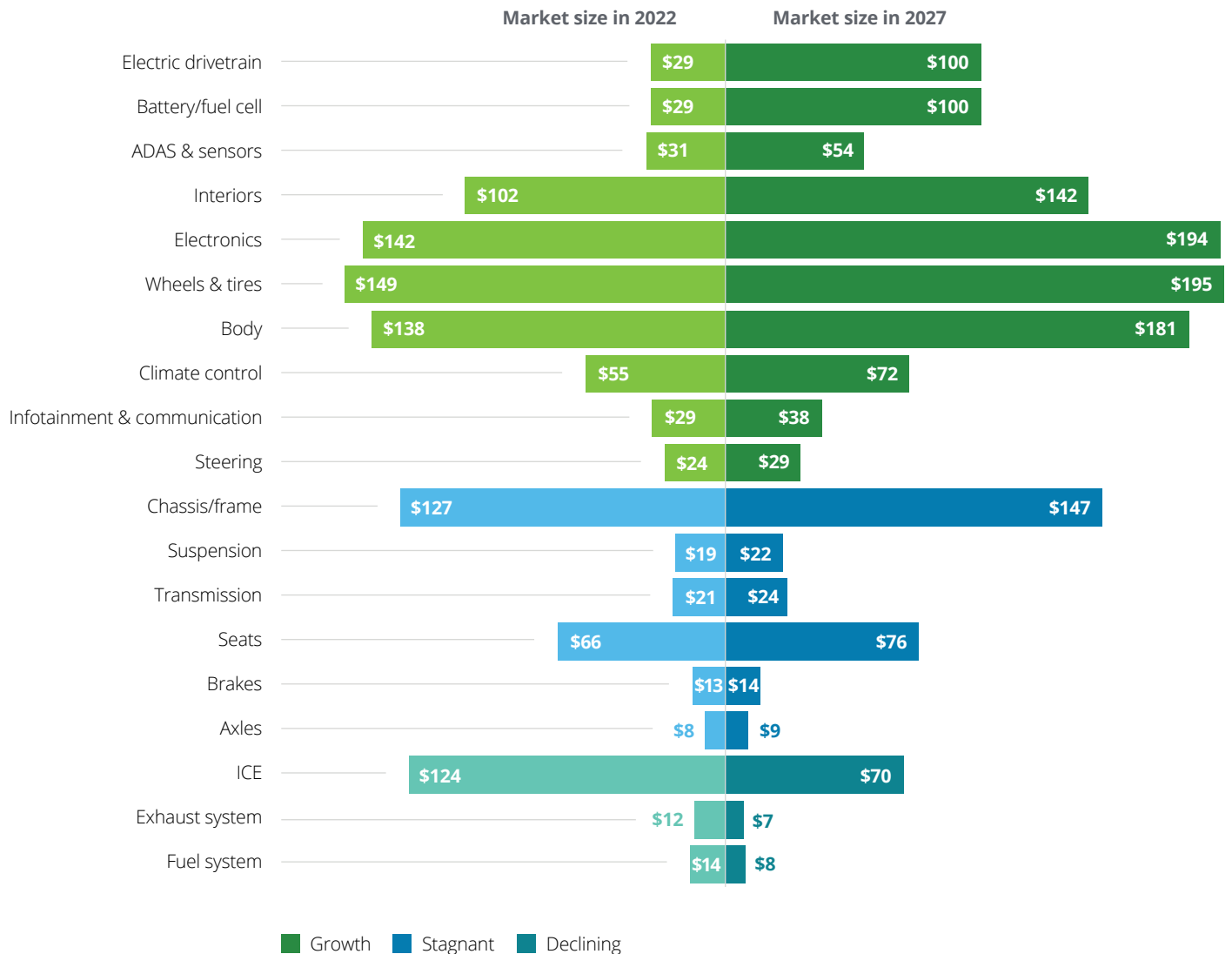
**Figure 4. Automotive component segment growth (2022–2027)**



Source: Deloitte analysis of company financials.

However, it should be noted that ICE vehicles aren't going away anytime soon and, as a result, legacy component clusters will likely still be needed for the foreseeable future. Though the market size for fossil-fueled engines is expected to decline, new ICE vehicles will be sold, and existing vehicles will still travel the roads. This will create a substantial market for new and replacement ICE components that some suppliers can focus on to positively impact their bottom line (figure 5).

**Figure 5. Automotive component segment size in \$US billions (2022 vs. 2027)**



Source: Deloitte analysis of company financials.

# What does it mean for suppliers?

As suppliers position themselves for success in a shifting landscape, there are a variety of strategic options that could be considered through a framework based on the growth trajectory of component categories. Depending on the company's positioning in each category, there are specific tactics to either expand, defend, or pivot the business going forward. For suppliers aligned with growth segments, tactics to support expansion could include leveraging nontraditional financing sources to fuel innovation while some suppliers may opt to defend their position by acquiring competitors to support shareholder value.

In contrast, some suppliers could pivot away from declining component segments by divesting business units to either strategic or financial buyers looking to consolidate specific categories to create scale efficiencies in the near term.

**Figure 6. Automotive supplier strategic option framework**

	Growth Electric drivetrain, battery/fuel cell, ADAS & sensors, electronics	Stagnant Chassis/frame, seats, suspension, brakes, axles	Declining ICE, exhaust system, fuel system
<b>Expand</b>	<ul style="list-style-type: none"> <li>Develop and acquire cutting-edge technologies to preserve leadership position</li> <li>Leverage nontraditional financing sources to fund growth and innovation</li> </ul>	<ul style="list-style-type: none"> <li>Shift investments toward growth segments, and focus resources on high-return product areas</li> </ul>	<ul style="list-style-type: none"> <li>Invest in developing markets with less technological advancements</li> </ul>
<b>Defend</b>	<ul style="list-style-type: none"> <li>Acquire competitors to increase base and maintain growth in shareholder value</li> <li>Form/expand alliances with strategic partners</li> </ul>	<ul style="list-style-type: none"> <li>Acquire or merge with peers to improve scale benefits and maximize cash flow in stable or lagging segments</li> </ul>	<ul style="list-style-type: none"> <li>Harvest remaining shareholder value within lagging businesses by consolidating and leveraging scale</li> </ul>
<b>Pivot</b>	<ul style="list-style-type: none"> <li>Spin off growth (or non-growth) businesses in order to focus strategic priorities and resource allocation</li> <li>Reevaluate capital and operating structure to provide flexibility</li> </ul>	<ul style="list-style-type: none"> <li>Align on long-term strategic direction, and divest business units/products not aligned with future vision</li> </ul>	<ul style="list-style-type: none"> <li>Divest businesses to competitor or private equity buyer to allow for more radical overhaul and reallocation of capital</li> </ul>

Source: Deloitte analysis.

### Streamline operating costs and protect operating margins

Even as manufacturers have seen healthy profit margins as the unintended benefit of the vehicle inventory crisis during 2022, many suppliers have not been able to extract a similar upside as their ability to renegotiate contracts has been limited. However, suppliers can protect margins through a focused effort to identify any remaining opportunity to streamline operating costs. Suppliers can also look to make critical investments in technology and automation that will unlock even leaner manufacturing processes and set the foundation for long-term competitiveness. This approach could also alleviate some of the pressure suppliers are feeling as a result of current labor market tightness and acute lack of skilled talent.

Suppliers also can improve working capital through means other than just changing payment terms with their suppliers causing downstream risks. Often suppliers believe there are limited actions to take based on just-in-time (JIT) manufacturing driving the subsequent payments of their invoices being automated and shared service centers executing mature processes. However, suppliers may be missing many opportunities to improve their working capital between 5% and 20% by completing a disciplined review of payment runs, eliminating the six to 20-day early payments, and cleaning up nonstandard payment terms of which many suppliers have more than 100 hidden in their enterprise resource planning software system, to highlight just a few.

### Critically evaluate material sourcing strategies

There is also no doubt that supply chains are becoming shorter and more regionally focused as companies strive to bolster their resiliency in the face of an uncertain geopolitical landscape. For their part, governments are providing strong encouragement for companies to reduce their dependence on globally integrated supply chains in the form of significant manufacturing investment incentives. To be sure, it will take several years to untangle long-established and often very complicated supply relationships, but the rapid transformation to EVs is causing some manufacturers to take a holistic approach to rethinking their supply chains, which represents a significant risk for unprepared incumbents. Suppliers can address this risk by evaluating their lower-tier supply relationships and material sourcing strategies, making sure they align with customer needs.

A critical capability for suppliers is proactive sensing and dynamic analysis of supply chain issues whether geopolitical, commodity shortages, or supplier distress. The chip shortage provided the playbook for all suppliers to master these insights, but scaling and building this muscle for proactive analysis should be table stakes to avoid the costs of the next disruption.

Suppliers should understand the revenue at risk through a series of what-if planning exercises to define contingency plans for alternative sourcing across commodities if trade bans occur between countries or the next commodity like the chip crisis.

As suppliers mature their proactive sensing capabilities, new requirements are growing for tracking and tracing of materials for sustainability and life cycle reporting starting with batteries but potentially growing into overall carbon footprint transparency of supply chains. These related topics and investments can be comingled into solutions that provide insights for planning along with traceability of key materials to provide assurance on sustainable methods, better passport tracking, and calculation of full-carbon footprints of a product through the full supply chain.

### Focus on where to play

Suppliers also need to think about where they want to play in a future characterized by significant overlap in powertrain technologies for the foreseeable future. As the average age of the US light vehicle fleet is now more than 12 years old,<sup>17</sup> ICE cars and trucks sold at the end of the decade will likely be in operation well into the middle of the century. All these vehicles will need parts for maintenance and repair over the course of their operating life. Suppliers producing these parts for OEM application could shift more of their business to service the needs of the vehicle aftermarket as a way to extend the life of these manufacturing assets. However, divesting noncore assets to enable a reallocation of capital that aligns with a well-considered growth strategy may be a critical near-term objective for suppliers across the value chain. At the same time, suppliers can also sunset nonperforming assets that represent a drag on operations.

### Look for M&A opportunities

Finally, the transition to electric vehicles is beginning to apply enormous pressure on the competitive landscape where not every vehicle manufacturer is guaranteed to survive (at least in its current form). This risk applies to both established incumbents and emerging disrupters, requiring suppliers to make careful choices regarding the customer relationships they want to focus on. Many suppliers have invested in e-mobility divisions, but they may have been overly exposed to financial pressures affecting the sector, providing larger integrators with an opportunity to bolster their innovation efforts through acquisition. In short, there may be a number of undervalued players that would be attractive targets for either strategic or financial buyers looking to take advantage of current conditions. Indeed, the potential for more M&A activity on the horizon in the supply sector is growing rapidly.



# Conclusion

Despite the prolonged period characterized by a sector having to adapt to one crisis after another, there is likely more disruption and fundamental change on the horizon. Suppliers will likely continue to struggle in their efforts to realign their businesses with new sector realities. The wholesale transformation toward an electric mobility future means suppliers should not only think about what they produce but also how they produce it. Suppliers should also think about what customer relationships they need to double-down on and which new relationships they need to forge. There is also a structural evolution taking place where long-standing truisms are being tested or discarded, including a volume-based business model, globally integrated supply chains, and a JIT manufacturing paradigm. Handling each one of these shifts in isolation would be difficult enough, but facing them together represents a potential challenge for suppliers across the value chain.

To make matters even tougher, many OEMs have started to position themselves for a weaker economic environment by focusing on operational efficiencies and reducing headcount. In aggregate, the tone being set is making it increasingly difficult for suppliers to gain any relief on pricing through contract renegotiations. Moving to more standardized, less complicated vehicle architectures may also mean fewer, more competitive opportunities for suppliers to engage with OEM customers.

While “future-proofing” a business in today’s highly volatile climate may be asking a bit too much, there are a variety of signposts that can illuminate opportunities for well-positioned companies willing to make the hard decisions necessary for sustained growth.



# Contact

## Jason Coffman

Principal  
Deloitte Consulting LLP  
[jasoncoffman@deloitte.com](mailto:jasoncoffman@deloitte.com)

## Raj Iyer

Managing Director  
Deloitte Consulting LLP  
[rajeiyer@deloitte.com](mailto:rajeiyer@deloitte.com)

# Acknowledgments

The authors would like to thank **Chris Barber, Kelly Warner, Srinivasa Reddy Tummalapalli, Dinesh Tamilvanan, and Gregg Geller** for their significant contributions to the research.



# Endnotes

1. Sebastian Pfeifle, Jeff Paul, and Harald Proff, [The future of automotive mobility to 2035](#), Deloitte, February 2023.
2. Harry Dempsey and Peter Campbell, [“Carmakers switch to direct deals with miners to power electric vehicles,”](#) *Financial Times*, November 14, 2022.
3. John Irwin, [“Auto suppliers are asking for contract relief,”](#) *Automotive News*, August 14, 2022.
4. Michelle Krebs, [“Inventory build-up suggests incentives may be coming,”](#) Cox Automotive, January 12, 2023.
5. Deloitte analysis based on data from S&P Global Mobility, accessed March 14, 2023.
6. Andrei Nedelea, [“US car market shrunk in 2022 but EV sales went up by two thirds,”](#) *InsideEVs*, January 18, 2023.
7. Deloitte analysis based on data from IEA's *Global EV outlook 2022* (May 2022) and S&P Global Mobility, accessed March 14, 2023.
8. David Gohlke et al., [Assessment of light-duty plug-in electric vehicles in the United States](#), 2010–2021, Argonne National Laboratory, November 2022.
9. Karn Dhingra, [“Inflation Reduction Act could put \\$100 billion in U.S. EV battery industry,”](#) *Automotive News*, December 6, 2022.
10. Christine McDaniel, [“The cost of battery production tax credits provided in the IRA,”](#) *Forbes*, February 1, 2023.
11. US Congress, [Inflation Reduction Act of 2022](#).
12. Wilfried Eckl-Dorna, Ewa Krukowska, and Tom Mackenzie, [“VW and BMW battery supplier could reap billions from Biden's EV bill,”](#) *Bloomberg*, updated February 14, 2023.
13. Catherine Clifford, [“These states will dominate EV battery manufacturing in 2030,”](#) CNBC, January 5, 2023.
14. Deloitte, [2023 Global Automotive Consumer Study](#); Deloitte, [2019 Global Automotive Consumer Study](#).
15. The White House, [“Fact Sheet: President Biden announces steps to drive American leadership forward on clean cars and trucks,”](#) August 5, 2021.
16. Deloitte, [2023 Global Automotive Consumer Study](#).
17. Nishant Parekh and Todd Campau, [“Average age of vehicles in the US increases to 12.2 years, according to S&P Global Mobility,”](#) S&P Global Mobility, May 23, 2022.



#### **About Deloitte**

Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited, a UK private company limited by guarantee ("DTTL"), its network of member firms, and their related entities. DTTL and each of its member firms are legally separate and independent entities. DTTL (also referred to as "Deloitte Global") does not provide services to clients. In the United States, Deloitte refers to one or more of the US member firms of DTTL, their related entities that operate using the "Deloitte" name in the United States and their respective affiliates. Certain services may not be available to attest clients under the rules and regulations of public accounting. Please see [www.deloitte.com/about](http://www.deloitte.com/about) to learn more about our global network of member firms.

This publication contains general information only and Deloitte is not, by means of this publication, rendering accounting, business, financial, investment, legal, tax, or other professional advice or services. This publication is not a substitute for such professional advice or services, nor should it be used as a basis for any decision or action that may affect your business. Before making any decision or taking any action that may affect your business, you should consult a qualified professional adviser. Deloitte shall not be responsible for any loss sustained by any person who relies on this publication.